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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,179	10/11/2001	Mark Yarkosky	1740	9109
28005	7590	01/23/2004	EXAMINER	
SPRINT 6391 SPRINT PARKWAY KSOPHT0101-Z2100 OVERLAND PARK, KS 66251-2100			PERSINO, RAYMOND B	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 01/23/2004

Remail #9

Please find below and/or attached an Office communication concerning this application or proceeding.



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09/975,179	10/11/2001	Mark Yarkosky	1740	9109

7590 11/19/2003

Steven J. Funk
Sprint Corporation
8140 Ward Parkway
Kansas City, MO 64114

EXAMINER

PERSINO, RAYMOND B

ART UNIT	PAPER NUMBER
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2682

DATE MAILED: 11/19/2003

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09/975,179	10/11/2001	Mark Yarkosky	1740	9109

7590 10/08/2003

Steven J. Funk
Sprint Corporation
8140 Ward Parkway
Kansas City, MO 64114

EXAMINER

PERSINO, RAYMOND B

ART UNIT	PAPER NUMBER
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2682

9

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,179

Applicant(s)

YARKOSKY, MARK

Examiner

Raymond B. Persino

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 & 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5, 11-15, 20-23, 25, 27, and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by JUDD et al (WO 01/52447 A2).

Regarding claim 1, JUDD et al discloses a propagation system for extending into an enclosure a wireless coverage area provided by a base station located outside of the enclosure, the propagation system comprising: a propagation relay (elements 110, 11, 112 and 113 of figure 23a), the propagation relay including at least one antenna (elements 110 and 113 of figure 23a) for transmitting to and receiving from the base station wireless signals in a first set of frequencies, and for transmitting into and receiving from inside of the enclosure wireless signals in a second set of frequencies, and a frequency converter (element 111 of figure 23a) for converting between the first set of frequencies and the second set of frequencies; and at least one mobile station interface port (element 119 of figures 23a and 23b) located in the enclosure, the at least one mobile station interface port including at least one antenna (elements 119a and 119d of figure 23b) for transmitting and receiving wireless signals in the first set of frequencies and in the second set of frequencies, the at least one mobile station

interface port including a frequency converter (element 119c of figure 23b) for converting between the first set of frequencies and the second set of frequencies (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 2, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the propagation relay includes a first antenna (element 110 of figure 23a) for transmitting and receiving wireless signals in the first set of frequencies and a second antenna (element 113 of figure 23a) for transmitting and receiving wireless signals in the second set of frequencies (see page 17 lines 15-25).

Regarding claim 3, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the at least one mobile station interface port includes a first antenna (element 119d of figure 23b) for transmitting and receiving wireless signals in the first set of frequencies and a second antenna (element 119a of figure 23b) for transmitting and receiving wireless signals in the second set of frequencies (see page 17 lines 26 to page 18 line 7).

Regarding claim 4, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses a repeater (elements 114 and 115 of figure 23a), wherein the repeater is capable of receiving at the second downlink frequency and transmitting at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 5, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses a repeater (elements 114

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and 115 of figure 23a), wherein the repeater is capable of receiving at the second uplink frequency and transmitting at the second uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 11, JUDD et al discloses a propagation system for providing wireless communications between at least one mobile station located in an enclosure and a base station located outside of the enclosure, the base station transmitting wireless signals at a first downlink frequency and receiving wireless signals at a first uplink frequency, the mobile station transmitting wireless signals at the first uplink frequency and receiving wireless signals at the first downlink frequency, the propagation system comprising: at least one propagation relay (elements 110, 11, 112 and 113 of figure 23a), the at least one propagation relay transmitting within the enclosure at a second downlink frequency wireless signals received from the base station at the first downlink frequency, the at least one propagation relay transmitting to the base station at the first uplink frequency wireless signals received from inside of the enclosure at a second uplink frequency; and at least one mobile station interface port (element 119 of figures 23a and 23b) located in the enclosure, the at least one mobile station interface port transmitting at the second uplink frequency wireless signals received from the at least one mobile station at the first uplink frequency, the at least one mobile station interface port transmitting to the at least one mobile station at the first downlink frequency wireless signals received at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 12, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the at least one propagation relay includes: a first antenna (element 110 of figure 23a) for transmitting to the base station wireless signals at the first uplink frequency and for receiving from the base station wireless signals at the first downlink frequency; and a second antenna (element 113 of figure 23a) for transmitting within the enclosure wireless signals at the second downlink frequency and for receiving from the enclosure wireless signals at the second uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 13, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the at least one mobile station interface port includes: a first antenna (element 119d of figure 23b) for transmitting to the at least one mobile station wireless signals at the first downlink frequency and for receiving from the mobile station wireless signals at the first uplink frequency; and a second antenna (element 119a of figure 23b) for transmitting wireless signals at the second uplink frequency and for receiving wireless signals at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 14, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the first set of frequencies is within the range of approximately 824 MHz to 1.910 GHz (see page 18 lines 16-18 and line 21).

Regarding claim 15, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the second set of frequencies is within the range of approximately 40.66 MHz to 2.5 GHz (see page 18 lines 16-18).

Regarding claim 20, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the at least one propagation relay includes a plurality of propagation relays (elements 110a-110c and 111a-111c of figure 23a), and where each one of the plurality of propagation relays is capable of receiving from the base station at the first downlink frequency and sending to the base station at the first uplink frequency, and where each one of the plurality of propagation relays is capable of sending to the at least one mobile station interface port at the second downlink frequency and receiving from the at least one mobile station interface port at the second uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 21, JUDD et al discloses a method for providing wireless communications between a mobile station located in an enclosure and a base station located outside of the enclosure, the method comprising: receiving wireless signals at a first downlink frequency transmitted by the base station; converting the wireless signals at the first downlink frequency into wireless signals at a second downlink frequency; transmitting into the enclosure the wireless signals at the second downlink frequency; receiving the wireless signals at the second downlink frequency; converting the wireless signals at the second downlink frequency into recovered wireless signals at the first

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downlink frequency; and transmitting to the mobile station the recovered wireless signals at the first downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 22, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses receiving wireless signals at a first uplink frequency transmitted by the mobile station; converting the wireless signals at the first uplink frequency into wireless signals at a second uplink frequency; transmitting the wireless signals at the second uplink frequency; receiving the wireless signals at the second uplink frequency; converting the wireless signals at the second uplink frequency into recovered wireless signals at the first uplink frequency; and transmitting to the base station the recovered wireless signals at the first uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 23, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving wireless signals at a first downlink frequency is done using a first antenna (element 110 of figure 23a), and wherein the step of transmitting into the enclosure is done using a second antenna (element 113 of figure 23a) (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 25, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving the wireless signals at the second downlink frequency is done using a first antenna (element 119a of figure 23b), and wherein the step of transmitting to the mobile station

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is done using a second antenna (element 119d of figure 23b) (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 27, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving wireless signals at a first uplink frequency is done using a first antenna (element 119b of figure 23b), and wherein the step of transmitting the wireless signals at the second uplink frequency is done using a second antenna (element 119a of figure 23b) (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 29, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving the wireless signals at the second uplink frequency is done using a first antenna (element 113 of figure 23a), and wherein the step of transmitting to the base station is done using a second antenna (element 110 of figure 23a) (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-10, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JUDD et al (WO 01/52447 A2).

Regarding claim 6, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses the mobile station interface port includes at least one antenna (elements 119a and 119d of figure 23b) for transmitting and receiving wireless signals in the first set of frequencies and in the second set of frequencies and further including a frequency converter (see element 119c of figure 23b) for converting between the first set of frequencies and the second set of frequencies. However, JUDD et al does not explicitly disclose that the at least one mobile station interface port includes a plurality of mobile station interface ports located in the enclosure. Nevertheless, JUDD et al does suggest using a plurality of mobile station interface ports located in an enclosure (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). Specifically, JUDD et al teaches using two or more repeaters so as to provide coverage to RF null or "blank" areas within the building. While this is discussed in terms of Ethernet coverage the same logic would apply to PCS coverage. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a plurality of mobile station interface ports located in the enclosure. Providing a plurality of mobile station interface ports located in the enclosure aids in providing coverage to RF null or "blank" areas within the building. In this way, the provider or customer can cheaply and easily install two or more mobile station interface ports to provide coverage to various areas of the building, such as where the RF signal level has low Signal to Noise (ratio), or where there is no signal at all.

Regarding claim 7, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses a repeater (elements 114 and 115 of figure 23a), wherein the repeater is capable of receiving at the second downlink frequency and transmitting at the second downlink frequency, and wherein the repeater receives at the second downlink frequency from a first mobile station interface port (element 119 of figure 23a) of the plurality of mobile station interface ports and transmits to a second mobile station interface port of the plurality of mobile station interface ports at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 8, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses a repeater (elements 114 and 115 of figure 23a), wherein the repeater is capable of receiving at the second uplink frequency and transmitting at the second uplink frequency, and wherein the repeater receives at the second uplink frequency from a first mobile station interface port (element 119 of figure 23a) of the plurality of mobile station interface ports and transmits to a second mobile station interface port of the plurality of mobile station interface ports at the second uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 9, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that each one of the plurality of mobile station interface ports (element 119 of figure 23a) is located in the enclosure so as to be able to transmit to the propagation relay and to receive from the

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propagation relay wireless signals in the second set of frequencies (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 10, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses at least one mobile station, wherein the at least one mobile station is capable of communicating with at least one of the plurality of mobile station interface ports (element 119 of figure 23a) in the first set of frequencies (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

Regarding claim 16, see the rejection of the parent claim concerning the subject matter this claim depends from. However, JUDD et al does not explicitly disclose that the at least one mobile station interface port includes a plurality of mobile station interface ports located in the enclosure. Nevertheless, JUDD et al does suggest using a plurality of mobile station interface ports located in an enclosure (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). Specifically, JUDD et al teaches using two or more repeaters so as to provide coverage to RF null or "blank" areas within the building. While this is discussed in terms of Ethernet coverage the same logic would apply to PCS coverage. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a plurality of mobile station interface ports located in the enclosure. Providing a plurality of mobile station interface ports located in the enclosure aids in providing coverage to RF null or "blank" areas within the building. In this way, the provider or customer can cheaply and easily install two or more mobile station interface ports to provide coverage to various areas of

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the building, such as where the RF signal level has low Signal to Noise (ratio), or where there is no signal at all.

Regarding claim 19, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the mobile station interface port is located in the enclosure so as to be able to transmit to the at least one propagation relay wireless signals at the second uplink frequency and to receive from the at least one propagation relay wireless signals at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7).

5. Claims 17, 18, 24, 26, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over JUDD et al (WO 01/52447 A2) in view of an examiner's official notice.

Regarding claim 17, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the first mobile station interface port is capable of sending to a repeater at the second downlink frequency and where the repeater is capable of receiving from the first mobile station interface port at the second downlink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). However, JUDD et al does not disclose that the repeater is a second mobile station interface port. Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made for the functions of a repeater and mobile station interface port to be combined. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the repeater to be also be a second mobile station interface port. The integration of

the repeater and mobile station interface port functions would save space and reduce cost by allowing for the two functions of share common elements.

Regarding claim 18, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the first mobile station interface port is capable of sending to a repeater at the second uplink frequency and where the repeater is capable of receiving from the first mobile station interface port at the second uplink frequency (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). However, JUDD et al does not discloses that the repeater is a second mobile station interface port. Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made for the functions of a repeater and mobile station interface port to be combined. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made for the repeater to be also be a second mobile station interface port. The integration of the repeater and mobile station interface port functions would save space and reduce cost by allowing for the two functions of share common elements.

Regarding claim 24, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving wireless signals at a first downlink frequency is done using a first antenna, and wherein the step of transmitting into the enclosure is done using the second antenna (element 113 of figure 23a). However, JUDD et al does not discloses that the first and second antenna are the same antenna. Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made to use a common antenna for

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both transmission and reception. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a common antenna for both transmission and reception. The use of a use a common antenna for both transmission and reception would save space and reduce cost by allowing for the two functions of share a common element.

Regarding claim 26, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving the wireless signals at the second downlink frequency is done using a first antenna (element 119a of figure 23b), and wherein the step of transmitting to the mobile station is done using a second antenna (element 119d of figure 23b). However, JUDD et al does not discloses that the first and second antenna are the same antenna.

Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made to use a common antenna for both transmission and reception. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a common antenna for both transmission and reception. The use of a use a common antenna for both transmission and reception would save space and reduce cost by allowing for the two functions of share a common element.

Regarding claim 28, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving wireless signals at a first uplink frequency is done using a first antenna (element 119b of figure 23b), and wherein the step of transmitting the wireless signals at the second uplink frequency is done using a second antenna (element 119a of figure 23b) (see

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figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). However, JUDD et al does not disclose that the first and second antenna are the same antenna.

Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made to use a common antenna for both transmission and reception. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a common antenna for both transmission and reception. The use of a use a common antenna for both transmission and reception would save space and reduce cost by allowing for the two functions of share a common element.

Regarding claim 30, see the rejection of the parent claim concerning the subject matter this claim depends from. JUDD et al further discloses that the step of receiving the wireless signals at the second uplink frequency is done using a first antenna (element 113 of figure 23a), and wherein the step of transmitting to the base station is done using a second antenna (element 110 of figure 23a) (see figures 22, 23a and 23b as well as page 17 line 7 to page 18 line 7). However, JUDD et al does not disclose that the first and second antenna are the same antenna. Nevertheless the examiner takes official notice that it was known in the art at the time the invention was made to use a common antenna for both transmission and reception. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a common antenna for both transmission and reception. The use of a use a common antenna for both transmission and reception would save space and reduce cost by allowing for the two functions of share a common element.

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JUDD et al (US 2003/0054763 A1) discloses a method and apparatus for band-to-band translation in a wireless communication system.

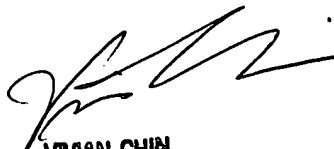
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond B. Persino whose telephone number is (703) 308-7528. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Raymond B. Persino *RP*
Examiner
Art Unit 2682

RP


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
9/30/03